

RAISED STI PROCESS FOR MULTIPLE GATE OX AND SIDEWALL PROTECTION ON STRAINED Si/SGOI STRUCTURE WITH ELEVATED SOURCE/DRAIN

Abstract

The present invention provides a strained/SGOI structure that includes an active device region of a relaxed SiGe layer, a strained Si layer located atop the relaxed SiGe layer, a raised source/drain region located atop a portion of the strained Si layer, and a stack comprising at least a gate dielectric and a gate polySi located on another portion of the strained Si layer; and a raised trench oxide region surrounding the active device region. The present invention also provides a method of forming such a structure. In the inventive method, the gate dielectric is formed prior to trench isolation formation thereby avoiding many of the problems associated with prior art processes in which the trench oxide is formed prior to gate dielectric formation.